

U.S. Patent Application Serial No. 09/699,624
Reply to Office Action dated June 9, 2004

Remarks:

Applicants have read and considered the Office Action dated September 9, 2004 and the references cited therein. Claims 1, 7 and 20 are amended. Claims 1-3, 5-7, 10-17 and 20-21 are pending.

Claims 1-3, 6-7, 10-17 and 20-21 were rejected as being unpatentable over Street in view of Watannabe, previously cited. Claims 1 and 20 have been amended to further clarify and differentiate over Street and Watannabe. Applicants assert that neither Street nor Watannabe teach the coordination and controls of the various operations to achieve the present invention, which is now recited in claims 1 and 20. Moreover, even if combined, the references do not achieve the present invention.

In the Action, the Examiner asserted that Street discloses a controller connected to the light valves and the sensor array and that it would have been obvious in view of Watannabe's illumination unit to not only control the operation of the light valves and sensor array, but also the illumination unit. Applicants assert that the control previously recited has not been fully addressed. Applicants assert that not just the control of various devices, but coordinating the timing of all of the various systems and operations achieves the stereoscopic device of the present invention and provides for improved detection that is neither shown nor suggested by Street or Watannabe, even when combined. The device of Street cannot *control and coordinate* all of the systems as now recited. Street only discloses a system that provides a stereoscopic image using a single charge coupled device (CCD) and provides a controller that switches between the two apertures and the CCD. This controller is not adapted for timing sequenced light, nor is it adapted to control the CCD according to lighting sequences. The present application is directed at producing a stereoscopic color image from a black and white image and not at improving such an image, which is the goal of Street. The coordination of the timing of the light valves and the alternating beams of light is now recited. Moreover, a combination of the prior art does not achieve the controlled timing and coordinated operation of light valves, a sensor array and a multi wavelength illumination unit to achieve improved detection. Hindsight

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cannot lead one of skill in the art to achieve a combination when the underlying art does not teach or suggest combination and is not compatible. Applicants assert that the rejection of independent claims 1 and 20 is overcome by the present Amendment. Moreover, the claims depending therefrom are also believed to be allowable.

Watanabe discloses a system that provides improved color monocular images, using sequenced lighting and provides a controller, which sequences between the alternating light beams and the CCD. This controller is not adapted for timing sequenced apertures, nor is it adapted to control and coordinate the CCD according to aperture sequences. Therefore, the Street and Watanabe devices are not compatible and the control of one cannot be used to control the other. The devices do not teach or suggest combining and are directed to solving different unrelated problems. Even when combined Street and Watanabe would not achieve the presently recited invention as the combination is incapable of performing the coordination of the operations.

Moreover, the present invention provides for further coordination of timing of the various systems to achieve the stereoscopic images. As shown for example in Figures 21A, 21B, 23 and 24, the present invention coordinates the sequencing of the apertures, the illumination unit and the detector to achieve a desired stereoscopic image. The various signals illustrate the coordination of timing of all of the devices that is not possible with the prior art or any combination thereof. Neither Street nor Watanabe, teach or suggest coordination a CCD, multiple apertures and multiple separated light beams.

Moreover, claims 1 and 20 further recite at least two separated alternating beams of light, each of said beams of light characterized as being in a different range of wavelengths. Street only shows image enhancement, while Watanabe shows a single beam passing through a rotating filter. As clearly shown in Figures 12A and 12B, the present invention produces at least two *separated* beams that are produced only through precise coordination of the light valves and the illumination unit. None of the prior art, either alone or in combination, teaches or suggests such a stereoscopic device or method that produces the stereoscopic images of the present

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invention. Moreover, the rotating filter of Watannabe is impractical for many applications and difficult to vary and coordinate with other operations. Applicants assert that the recited at least two separated alternating beams of light is neither shown nor suggested by the cited art.

Applicants assert that when all of the recited elements and steps are properly considered without hindsight, the submitted claims patentably distinguish over the prior art. A speedy and favorable action on the merits is hereby solicited. If the Examiner feels that a telephone interview may be helpful in this matter, please contact Applicant's representative at (612) 336-4728.

Respectfully submitted,

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PATENT TRADEMARK OFFICE